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Why People Engage in Parasuicide: A Cross-Cultural Study of Intentions

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Information obtained at interview from 1,646 parasuicide patients in 14 regions in 13 European countries participating in the WHO/EURO Multicentre Study on Suicidal Behaviour was used to study self-reported intentions involved in parasuicide. Comparisons were made across cultures, genders, and age groups. Although some statistically significant differences were found, the effect sizes were very small. The main finding from this study is thus that parasuicide patients in different countries tend to indicate that similar types of intentions are involved in their acts of parasuicide, and that the intentions do not vary greatly with gender or age. The hypothesis that rates of suicide and parasuicide vary between regions with the frequency with which suicidal intention is indicated by the patients was also tested, but was supported only for women and in relation to national suicide rates. The findings from this study are likely to be generalizable to other settings and have implications for clinical practice.

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Previous research has shown that acts of deliberate self-poisoning and self-injury involve a variety of different motives/reasons/intentions, and that these often include nonsuicidal purposes (e.g., Bancroft, Skrimshire, & Simkin, 1976; Bancroft et al., 1979; Birtchnell & Alarcon, 1971; Hawton, Cole, O'Grady, & Osborn, 1982; Hjelmeland, 1995; Holden, Kerr, Mendonca, & Velamoor, 1998; James & Hawton, 1985; Lukianowicz, 1972; Michel, Valach, & Waeber, 1994; Varadaraj, Mendonca, & Rauchenberg, 1986; Velamoor & Cernovsky, 1992). This is the reason for the dilemma as to what suicidal behavior not resulting in death should be termed: attempted suicide, parasuicide, deliberate self-harm, nonfatal suicidal behavior, and so forth (e.g., O'Carroll et al., 1996). In this article, the term *parasuicide* is used.

In explaining why some people engage in suicidal behavior, there is also confusion as to the use of the concepts of reasons, motives, and intentions. Hjelmeland and Knizek (1999) have argued that the term *intention* should be employed when nonfatal acts are explained in terms of something the persons wanted to achieve by their behavior. Therefore this term will be used in the present study. It is recognized, however, that patients may often not have had full insight into the nature of the intention(s) involved. Recognition of the fact that there are various intentions involved in parasuicide has led to questions about what precisely do individuals intend to achieve by this behavior? Clarifying intentions in individual cases is relevant to clinical practice. Thus Shneidman (1985) has argued that a focus on the intentional (he used the term *motivational*) aspects of such behavior is necessary to get a better understanding of the suicidal individual.

Many of the previous studies of intentions underlying parasuicide have been conducted in the United Kingdom (Bancroft et al., 1976, 1979; Birtchnell & Alarcon, 1971; Hawton et al., 1982; James & Hawton, 1985; Lukianowicz, 1972; Varadaraj et al., 1986; Velamoor & Cernovsky, 1992). Examples of the types of intentions that have been identified include a temporary escape from unbearable circumstances, an attempt to influence some significant other(s), and a signal that a person needs help. Michel et al. 1994 used methodology similar to that in some of these earlier studies (Bancroft et al., 1979; Hawton et al., 1982; James & Hawton, 1985) in an investigation of parasuicide patients in Switzerland and found some differences in the proportions of Swiss patients choosing various intentions compared to those in the British studies. For instance, a very large proportion of the patients in the Swiss study (91%) claimed that the intention had been to escape from an unbearable/terrible situation compared to those in the British studies (56% in Bancroft et al., 1979; 42% in Hawton et al., 1982; 44% in James & Hawton, 1985). Another example was the intention "to make things easier for someone," which was chosen by 33% in the Swiss study but only by 7% in one of the British samples (Bancroft et al., 1979). Boergers, Spirito, and Donaldson (1998) compared the frequencies of various reasons for suicidal behavior among American adolescents with data reported from the Netherlands and the UK, and also found some differences. This raises the question of possible cross-national or cross-cultural differences in the intentions involved in parasuicide.

One major problem in comparing results from different studies is the potential variation in definitions used for selecting samples of patients to be included in investigations. The WHO/EURO Multicentre Study of Suicidal Behaviour (Bille-Brahe et al., 1995, 1996a), in which a large number of European centers participate, has provided a unique opportunity for a cross-cultural comparison because researchers from different countries have used the same definition of parasuicide in selecting samples of patients, the same research instrument to assess the variables in question, and the same data-collecting procedures. In a previous report of data from the first wave of the WHO study, the level of suicidal intent was investigated as a first step toward determining what meanings parasuicide might have for people (Hjelmeland et al., 2000). In spite of large differences in parasuicide rates, only small differences

were found in levels of patients' suicidal intent. Other intentions were not investigated in that study.

An important question is whether parasuicide by men and women involves different intentions. The potential significance of gender was neglected in most of the earlier studies. Even where results have been reported separately for men and women, it is unclear whether the results were subjected to statistical testing, although major differences were not apparent. This is perhaps surprising given the fact that in the Western world, more men engage in suicide and more women in parasuicide. Moreover, in some countries the sex differences are decreasing, while in others they are increasing. Potential gender differences therefore require further investigation, especially in relation to possible cross-cultural differences.

Rates of suicidal behavior also vary with age, and here, too, there are obvious differences between suicide and parasuicide: Suicide rates usually increase with age (with some exceptions), while rates for parasuicide are usually highest among the young and middle-aged. Therefore age may influence the intentions involved in parasuicide. For example, do young men tend to communicate different things through parasuicide than elderly men do?

Rates of suicide and parasuicide vary between countries and regions (Schmidtke et al., 1996, 1999). One possible explanation might be the extent to which parasuicide involves suicidal or nonsuicidal intentions. Thus, where suicidal intention is frequent, one might expect suicide rates to be higher than in regions where it is less frequent. On the other hand, where suicidal intention is less commonly implicated in parasuicide, one might expect rates of parasuicide to be higher. To our knowledge, this has never been investigated.

In the present investigation, we have used data from the WHO/EURO Multicentre Study on Suicidal Behaviour to study self-reported intentions involved in parasuicide: in other words, what the behavior *means* to the patients themselves. This unique data set has been used to compare intentions across cultures, genders, and age groups. We have also investigated whether the frequency with which suicidal intention is indicated by participants is related to local rates of suicide and parasuicide.

METHOD

In the WHO/EURO study, parasuicide is defined as "an act with nonfatal outcome, in which an individual deliberately initiates a nonhabitual behavior that, without intervention from others, will cause self-harm, or deliberately ingests a substance in excess of the prescribed or generally recognized therapeutic dosage, and which is aimed at realizing changes which the subject desired via the actual or expected physical consequences" (Platt et al., 1992 p. 99). It should be noted that repetitive self-mutilation is excluded.

Data from 14 regions in 13 different European countries are included in the present investigation. These regions are Sør-Trøndelag (Norway), Umeå and Stockholm (Sweden), Helsinki (Finland), Odense (Denmark), Oxford (United Kingdom), Leiden (The Netherlands), Gent (Belgium), Würzburg (Germany), Hall/Innsbruck (Austria), Bern (Switzerland), Pecs (Hungary), Ljubljana (Slovenia), and Padova (Italy). The characteristics of the regions participating in the study have been thoroughly described elsewhere (Bille-Brahe, 1999).

The European Parasuicide Interview Schedule (EPSIS I and II; Kerkhof, Bernasco, Bille-Brahe, Platt, & Schmidtke, 1989) was used to collect the data. It includes several standardized and nonstandardized questionnaires, some completed by the interviewers and others by patient self-report (see Bille-Brahe et al., 1996b, 1997, for further details). A sample of the parasuicide patients in each region was interviewed twice by psychiatrists, psychologists, psychiatric nurses, or social workers. Interviewers from all the participating regions attended interview courses to make the interview procedures as similar as possible across regions. The initial inter-

view was usually carried out within a week following the parasuicide (EPSIS I); a second interview was conducted approximately 12 months later (EPSIS II). The EPSIS I interviews were carried out between 1990 and 1992 in the regions participating in the first wave of the study and between 1996 and 1998 in those participating in the second wave (Table 1). The interviews usually lasted 1–3 hours. The data files from each region were sent to the center in Odense where the data were checked, coordinated, and rechecked before they were released for use in specific analyses. Only data from the initial (EPSIS I) interviews are included in the present investigation.

Subjects

The number of persons interviewed and the proportions of men and women in each region are presented in Table 1. A total of 1,646 patients—1,003 (61%) women and 643 (39%) men aged 15 years and over—were included in the analyses. Women comprised the majority of the sample (54%–71%) in all the regions except Gent, where more of the sample were men (54%). The mean age for the total sample was 36.2 years for women (range = 15–87, *SD* = 14.9) and 36.0 years for men (range = 15–81, *SD* = 13.2). ANOVAs showed that there were significant age differences between the regions for both women ($F(13, 910) = 4.98$, $p < 0.0001$, $E^2 = 0.066$) and men ($F(13, 592) = 3.04$, $p < 0.001$, $E^2 = 0.063$). For women, the highest mean age was found in Odense (42.0 yrs) and the lowest in Umeå (27.9 yrs). For men, the highest mean age was found in Stockholm (41.4 yrs) and the lowest in Oxford (31.0 yrs).

The distribution according to age group was as follows: 365 aged 15–24 years (230 women and 135 men), 439 aged 25–34 years (254 women and 185 men), 644 aged 35–64 years (384 women and 260 men), and

TABLE 1
Number of Parasuicide Patients (Females, Males, and Total) in the Various European Regions

	Females		Males		
Region	N	%	N	%	Total
Sør-Trøndelag, Norway[a]	48	54	41	46	89
Umeå, Sweden[a]	81	66	41	34	122
Stockholm, Sweden[a]	127	63	74	37	201
Helsinki, Finland[a]	125	56	99	44	224
Odense, Denmark[a]	91	65	48	35	139
Oxford, United Kingdom[b]	92	61	58	39	150
Leiden, The Netherlands[a]	95	67	46	33	141
Gent, Belgium[b]	52	46	60	54	112
Würzburg, Germany[a]	73	59	51	41	124
Hall/Innsbruck, Austria[b]	22	56	17	44	39
Bern, Switzerland[a]	37	56	29	44	66
Pecs, Hungary[b]	46	65	25	35	71
Ljubljana, Slovenia[b]	39	63	23	37	62
Padova, Italy[a]	75	71	31	29	106
Total	1,003	61	643	39	1,646

Note. Excluded from the analyses was one transsexual patient from Stockholm.
[a]Interviews carried out during the period 1990–1992.
[b]Interviews carried out during the period 1996–1998.

82 aged 65 years or older. Information on age was missing for 116 (7%) of the cases.

The representativity of the interviewed samples compared to all the medically treated parasuicide patients in each region (registered in the monitoring part of the WHO/EURO Study) was tested by appropriate analyses (chi-square analyses, *t*-tests, Mann-Whitney *U*-tests). The following variables were tested: age, gender, method of the parasuicide, and previous parasuicide(s). The interviewed samples were representative of all medically treated parasuicide patients on these variables in all regions with the following exceptions: (1) gender: the interviewed sample had a larger proportion of women in Odense and Umeå; (2) age: the interviewed sample was younger in Padova; (3) method of parasucide: the interviewed samples had more often used self-poisoning in Sør-Trøndelag and Oxford; (4) previous parasuicide: in Odense, Umeå, Leiden, Ljubljana, and Hall/Innsbruck, the interviewed sample more often had a history of previous parasuicide(s), and in Helsinki and Bern less often.

Instruments

A questionnaire including various intentions was designed for the EPSIS based on the previous work of Bancroft and colleagues (1976, 1979). It consists of 14 possible intentions people might have for engaging in suicidal behavior. Each item is scored according to the relevance the patient says it had to why he or she carried out the act of parasuicide: major influence (score of 3), minor influence (2), or no influence (1). Patients can indicate more than one intention as having influenced the act. The list of intentions and the percentages of subjects who chose them are presented in Table 2.

The Suicidal Intent Scale (SIS; Beck, Schuyler, & Herman, 1974) was completed for each patient. This 15-item scale assesses the level of suicidal intent involved in an act of parasuicide. The items are scored 0, 1, or 2, yielding a possible range of scores from 0 to 30. The scores on the SIS have been presented in a previous report from the WHO/EURO study (including data from 9 of the 14 regions participating in the present study; Hjelmeland et al., 2000). In the present study, the patients' SIS scores have been compared with their responses to the questionnaire on the possible intentions involved in the acts of parasuicide.

Data analyses

Because several of the intention of parasuicide items in the questionnaire are intercorrelated, a factor analysis was performed. Subscales were computed by way of summarizing the items that made up the factors. For an item to be included in a subscale, the factor had to load more than 0.50 on the item and the group of items also had to make coherent semantic sense. The resulting subscales were then compared across regions and sexes using two-way ANOVAs in order to examine cross-cultural and sex differences. Because there were significant age differences between the regions, age was entered as a covariate in the ANOVAs. Correlation analyses (Pearson's r) were performed between the various intention subscales and the SIS as a reliability test of the patients' retrospective reports of intentions involved in their acts of parasuicide. Correlation analyses (Spearman's rank order correlation coefficient) were performed between choice of the item "wanted to die" and local parasuicide rates and also national and regional suicide rates. The level of statistical significance was set at $p < .05$. Effect sizes for the significant differences were assessed by eta squared (E^2).

Between 1.8% and 2.6% of the values on the 14 intention variables were missing. When the intention subscales were computed, these missing values were replaced by the mean values for the relative regions.

RESULTS

Factor Analysis of the Intention Questionnaire

The factor analysis of the intention questionnaire resulted in four factors with ei-

TABLE 2
The List of Possible Intentions People Might Have for Engaging in Parasuicide and the Percentages of Patients for Whom These Intentions had no, Minor, or Major Influence on Why They Carried Out the Parasuicidal Acts (Women: N = 1003, Men: N = 643)

	No Influence		Minor Influence		Major Influence	
Intentions	Women	Men	Women	Men	Women	Men
1. My thoughts were so unbearable, I could not endure them any longer.	15.8	17.2	16.6	19.2	67.7	63.6
2. I wanted to show someone how much I loved him/her.	70.3	66.0	11.2	12.4	18.5	21.5
3. It seemed that I lost control of myself, and I do not know why I did it.	36.8	36.9	20.3	20.6	42.9	42.5
4. The situation was so unbearable that I could not think of any other alternative.	10.7	16.2	13.0	12.6	76.3	71.2
5. I wanted to get away for a while from an unacceptable situation.	30.6	35.0	14.2	15.3	55.2	49.7
6. I wanted others to know how desperate I felt.	48.2	52.4	17.7	18.1	34.1	29.6
7. I wanted to die.	24.1	23.8	16.6	11.7	59.3	64.5
8. I wanted to get help from someone.	46.2	51.3	18.8	20.0	35.0	28.8
9. I wanted to know if someone really cared about me.	63.9	67.0	15.0	15.5	21.0	17.5
10. I wanted others to pay for the way they treated me.	75.4	76.5	11.4	12.9	13.2	10.6
11. I wanted to make someone feel guilty.	76.6	72.7	10.8	15.1	12.6	12.2
12. I wanted to persuade someone to change his/her mind.	74.5	73.7	11.5	13.3	14.0	13.0
13. I wanted to make things easier for others.	54.5	59.3	18.8	18.2	26.7	22.5
14. I wanted to sleep for a while.	56.5	65.0	13.0	11.7	30.5	23.3

genvalues exceeding 1.0, which together accounted for 57.6% of the variance. The varimax rotated factor loadings are presented in Table 3. The first subscale consisted of items related to seeking care and attention from others or testing of love (items 2, 6, 8, and 9) and was called Care Seeking ($\alpha = 0.73$). The second subscale consisted of items dealing with revenge, punishment, or manipulation of others (items 10–12), and was called Influencing Others ($\alpha = 0.78$). The third factor consisted of items dealing with escape or loss of control (items 3, 5, and 14). However, the factor only loaded 0.44 on the item "loss of control," so this item was not included in the subscale. This also makes sense in that loss of control is not an intention as such, but merely a description of what people experience. The third subscale, Temporary Escape ($\alpha = 0.53$), thus comprised the two remaining items, while "loss of control" was retained as a single item. The fourth subscale consisted of items dealing with unbearable thoughts and situations, the intention to die, and the wish to make things easier for others (items 1, 4, 7, and 13). This subscale was labeled Final Exit ($\alpha = 0.58$). Both factors 3 and 4 loaded relatively high on item 7 ("I wanted to die"). However, the third factor loaded negatively on this item, supporting the notion that those who only wanted a temporary escape from unbearable circumstances did not want to die.

Because many parasuicide patients indicate multiple intentions for their acts, it was expected that the four factors resulting from the factor analysis would be intercorrelated. An oblimin rotation of the factors was

therefore performed. This did not change the picture significantly, but two correlations were found: Factor 1 correlated positively with both Factor 3 ($r = .21$) and Factor 4 ($r = .31$), indicating low to medium effect sizes according to Cohen (1988).

Regional Variations

The mean scores for the subscales and the single item "loss of control" for patients from each region are presented in Table 4. To check for regional/national differences, separate two-way ANOVAs were performed for each of the subscales, with gender and region as independent variables and age as covariate. Significant differences between the regions were found for three of the subscales, while no significant sex differences or interaction effects between sex and region were found. The regional differences were found on the following subscales:

1. Care Seeking, $F(13, 1501) = 3.13$, $p < 0.001$, $E^2 = 0.026$. Follow-up deviation contrast analyses revealed that the mean scores in Sør-Trøndelag ($p < .001$) and Stockholm ($p < .05$) were significantly higher than the overall mean, whereas the mean scores in Leiden ($p < .01$) and Bern ($p < .01$) were significantly lower. However, the effect size of region was low; only 2.6% of the variance could be explained by region.

2. Temporary Escape, $F(13, 1501) = 5.17$, $p < 0.001$, $E^2 = 0.043$. Follow-up deviation contrast analyses showed that the mean scores in Stockholm ($p < .0001$) and Umeå ($p < .0001$) were significantly higher than the overall mean, whereas the mean scores in Ljubljana ($p < .001$), Gent ($p < .01$) and Bern ($p < .05$) were significantly lower. However, the effect size indicated that only 4.3% of the variance could be explained by region.

3. Final Exit $F(13, 1501) = 4.38$, $p < 0.001$, $E^2 = 0.037$. Follow-up deviation contrast analyses showed that the mean scores in Hall/Innsbruck ($p < .05$) and Ljubljana ($p < .05$) were significantly higher, whereas the mean scores in Helsinki ($p < .001$) and Oxford ($p < .01$) were significantly lower than the overall mean. Again, however, the effect

TABLE 3
The List of Possible Intentions Involved in Parasuicide and the Factor Loadings on Each of the Items

	Varimax Rotated Factor Loadings			
Intentions	I	II	III	IV
1. My thoughts were so unbearable, I could not endure them any longer.				.72
2. I wanted to show someone how much I loved him/her.	.74			
3. It seemed that I lost control of myself, and I do not know why I did it.			(.44)	
4. The situation was so unbearable that I could not think of any other alternative.				.76
5. I wanted to get away for a while from an unacceptable situation.			.71	
6. I wanted others to know how desperate I felt.	.63			
7. I wanted to die.			(–.45)	.64
8. I wanted to get help from someone.	.61			
9. I wanted to know if someone really cared about me.	.74			
10. I wanted others to pay for the way they treated me.		.88		
11. I wanted to make someone feel guilty.		.89		
12. I wanted to persuade someone to change his/her mind.		.56		
13. I wanted to make things easier for others.				.51
14. I wanted to sleep for a while.			.71	

Note. Percentages of explained variance for each of the four factors were 25.0%, 14.0%, 11.3%, and 7.4%, respectively.

TABLE 4
Intentions Subscale Scores (Means [M] *and Standard Deviations* [SD] *for Each of the Regions and Across all Regions, by Gender*

	Care Seeking (max. possible score 12)				Influencing Others (max. possible score 9)				Temporary Escape (max. possible score 6)				Final Exit (max. possible score 12)				Item: Loss of Control (max. possible score 3)			
	Women		Men		Women		Men		Women		Men		Women		Men		Women		Men	
Regions	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Sør-Trøndelag	7.88	2.67	7.20	2.53	4.82	2.35	3.68	1.25	4.18	1.60	3.75	1.55	9.42	2.09	8.85	1.88	2.29	0.85	2.39	0.80
Umeå	6.79	2.19	6.41	1.24	3.67	1.34	3.63	1.28	4.33	1.26	4.38	0.77	9.40	1.99	9.19	1.85	2.04	0.87	2.02	0.91
Stockholm	7.28	2.50	6.83	2.49	4.28	1.82	4.29	1.80	4.58	0.99	4.23	1.07	9.40	2.05	9.00	2.17	2.71	0.89	1.96	0.90
Helsinki	6.95	2.41	6.85	2.36	4.02	1.58	4.32	1.81	3.63	1.46	3.77	1.40	8.75	2.27	8.09	2.49	2.09	0.87	2.30	0.82
Odense	7.07	2.81	6.47	2.43	4.08	1.88	3.77	1.49	3.94	1.67	3.76	1.64	9.78	1.81	8.98	1.91	2.22	0.92	2.25	0.84
Oxford	7.01	2.51	6.93	2.51	4.01	1.62	4.28	1.68	4.18	1.38	3.66	1.37	8.71	2.08	8.81	2.09	1.85	0.86	1.83	0.88
Leiden	6.16	2.25	6.02	2.45	3.80	1.27	3.89	1.40	3.95	1.70	3.83	1.61	9.19	2.03	9.39	2.03	2.22	0.87	1.89	0.92
Gent	7.19	2.83	6.53	2.43	4.29	1.78	4.32	2.19	3.89	1.58	3.02	1.43	9.46	2.04	9.55	1.87	2.15	0.92	1.87	0.91
Würzburg	6.34	2.45	6.41	2.51	3.76	1.50	4.16	1.63	3.71	1.63	3.23	1.36	9.01	1.86	9.29	1.89	2.04	0.87	2.02	0.91
Hall/Innsbruck	6.02	2.05	7.53	2.83	4.09	1.77	5.00	2.50	3.96	1.70	4.12	1.54	9.80	2.20	10.39	1.77	2.09	0.92	2.24	0.90
Bern	6.08	2.50	5.52	2.23	4.24	1.99	4.28	1.93	3.54	1.56	3.27	1.33	9.42	1.77	8.99	2.08	1.97	0.93	2.17	0.89
Pecs	5.94	2.08	6.64	2.22	4.70	2.01	4.16	1.65	4.12	1.07	3.88	0.97	9.15	2.33	9.16	2.46	1.74	0.80	2.04	0.94
Ljubljana	5.82	2.18	6.65	2.44	4.15	1.84	4.13	1.33	3.21	1.38	3.39	1.31	10.10	1.29	9.83	2.15	2.08	0.84	2.00	0.74
Padova	7.11	2.59	6.90	2.69	4.63	1.96	4.00	1.48	3.80	1.38	4.10	1.42	9.11	2.18	9.77	1.88	1.96	0.86	2.07	0.93
Overall mean	6.80	2.50	6.61	2.46	4.13	1.75	4.13	1.71	3.98	1.47	3.73	1.40	9.25	2.06	9.06	2.13	2.06	0.88	2.06	0.88

size was very low; only 3.7% of the variance could be explained by region.

An ANOVA of the single item "loss of control" was also conducted, and a significant effect for region was found, $F(13, 1501) = 2.87$, $p < 0.001$, $E^2 = 0.024$. Follow-up deviation contrast analyses showed that the mean scores in Sør-Trøndelag ($p < .01$), Odense ($p < .05$) and Helsinki ($p < .05$), were significantly higher than the overall mean, whereas the scores in Oxford ($p < .01$) and Würzburg ($p < .05$) were significantly lower. The variance (2.4%) once more showed only a small effect of region.

Age and Gender

To investigate overall differences between men and women, ANOVAs of the pooled data set for each of these subscales were performed, with gender as the independent variable and age as a covariate. A significant gender difference was only found for the Temporary Escape subscale in that women scored significantly higher than men, $F(1, 1527) = 9.90$, $p = 0.002$, $E^2 = 0.006$. However, the effect size indicated that only 0.6% of the variance could be predicted by gender.

These ANOVAs were repeated separately within the various age groups. There were too few patients in the oldest age group (65+) to permit this analysis. Some significant regional differences were found within the age groups, but in all of them the effect sizes were very low, indicating again that region predicted a low percentage of the variance (4.1%–8.1%). No significant sex differences were found in any of the age groups.

Subsequently, the total sample was divided into three age groups: 15–29 years, 30–49 years, and 50 years or older. One-way ANOVAs were performed for men and women separately for each of the subscales, with age group as the independent variable. For women, significant age differences were found for the subscale Influencing Others, $F(2, 921) = 5.20$, $p = 0.006$, $E^2 = 0.011$ and the single item "loss of control," $F(2,921) = 5.16$, $p = 0.006$, $E^2 = 0.011$. On the subscale Influencing Others, the oldest age group scored lower ($M = 3.82$, $SD = 1.55$) than the other age groups (15–29: $M = 4.13$, $SD = 1.67$; 30–49: $M = 4.34$, $SD = 1.99$). On the single item "loss of control," the youngest age group ($M = 1.94$, $SD = 0.87$) scored lower than the other age groups (30–49: $M = 2.13$, $SD = 0.88$; 50+: $M = 2.14$, $SD = 0.91$). Again, however, the effect sizes were very small. No significant age group differences were found for men.

Correlation with Level of Suicidal Intent

Questions have been raised regarding the reliability of suicidal patients' own retrospective reports of the intentions involved in their parasuicides. We have therefore investigated the associations between the subscale scores and level of suicidal intent as measured by the SIS. The mean total SIS score for the pooled data set in the present study (including all 14 regions) was 12.99 for women ($SD = 6.54$; range 0–29) and 14.06 for men ($SD = 6.53$; range 0–30; Mann-Whitney *U*-test: $z = -3.24$, $p = 0.0012$). Thus the level of suicidal intent was generally somewhat higher in men than in women.

Correlation analyses (Pearson's r) between the SIS total score and scores on the various intention subscales were performed. Such analyses can serve as a test of consistency of the patients' reports, and thus an assessment of reliability. A positive correlation between scores for the SIS and the subscale Final Exit would indicate high consistency. Negative correlations between scores on the SIS and the other subscales would support this. This pattern was confirmed for both women and men (Table 5). The correlation coefficients between scores on the subscale Influencing Others and the SIS were, however, very low, and probably only statistically significant because of the large number of subjects included in the analyses. The direction of these correlations was, nevertheless, as expected. Also the single item "loss of control" correlated negatively with the level of suicidal intent.

TABLE 5
Correlations Between the Total Level of Suicidal Intent (Total SIS Score) and Scores on the Intentions Subscales

	SIS Score	
	Women ($N = 1003$)	Men ($N = 643$)
Care Seeking	–.33**	–.29**
Influencing Others	–.14**	–.10*
Temporary Escape	–.30**	–.31**
Final Exit	+.48**	+.48**
Single item "loss of control"	–.27**	–.26**

*$p < .05$, **$p < .001$.

The Intention "To Die" and Its Relationship to Regional and National Rates of Suicide and Regional Rates of Parasuicide

It may be hypothesized that there would be an association between the extent of suicidal and nonsuicidal intentions involved in parasuicide in different regions and the overall rates of both suicide and parasuicide. Thus, where the behavior is more often used for various nonsuicidal purposes, the overall rate of parasuicide might be expected to be higher, while regions where the behavior more often is used for suicidal purposes would be expected to have higher suicide rates. There should therefore be a negative correlation between overall rates of parasuicide and the frequency of choice of "wanted to die," while a positive correlation between suicide rates and the frequency of choice of "wanted to die" would be expected.

We have therefore compared these variables across the regions involved in this study by means of the Spearman rank order correlation coefficient (r_s) for men and women, separately. The frequencies of choice of the item "wanted to die" (with a score of 3 indicating a major influence) and the suicide and parasuicide rates in the various regions are presented in Table 6. We have done the analyses with both national (missing for Gent) and regional (missing for Oxford) suicide rates, and with regional parasuicide rates (missing for Ljubljana).

The analyses for national suicide rates supported the hypothesis for women ($r_s = .50$, $p < .05$; one-tailed) but not for men ($r_s = –.08$, *ns*). When the analysis was conducted for regional suicide rates, the hypothesis was not supported for either men ($r_s = –.16$, *ns*) or women ($r_s = .07$, *ns*). In the analyses of the relationship between choice of "wanted to die" and parasuicide, the correlations were in the expected direction, but the results did not quite reach the level of statistical significance for either women ($r_s = –.36$, *ns*) or men ($r_s = –.44$, *ns*; critical value = .48).

DISCUSSION

The main instrument used in this study was a well-tested questionnaire containing a number of intentions for parasuicide that had been identified in a series of previous investigations (e.g., Bancroft et al., 1979; Hawton et al., 1982; James & Hawton, 1985). The data used were based on interviews with 1,646 parasuicide patients investigated in 14 regions in 13 countries from Europe in the WHO/EURO Multicentre Study on Suicidal Behaviour (Bille-Brahe et al., 1995, 1996a). The intentions were grouped by means of a factor analysis. This resulted in four factors that were used to construct subscales labeled Care Seeking, Influencing Others, Temporary Escape and Final Exit, while "loss of control" was retained and analyzed as a single item.

Regional Comparisons

Statistically significant differences between the regions were found for three of the subscales and in the item "loss of control," but only minimal proportions of the variance were accounted for by region. When the pooled data set was analyzed, a statistically significant difference between men and women

TABLE 6
Frequency of Choice of the "Wanted to Die" Item (Major Influence) and Suicide and Parasuicide Rates per 100,000 Population (15+) in the Various Regions

	Wanted to Die (%)		Parasuicide Rates		Suicide Rates (Regional)		Suicide Rates (National)	
	Women	Men	Women	Men	Women	Men	Women	Men
Sør-Trøndelag, Norway[a]	54	56	177	151	9	27	8	24
Umeå, Sweden[a]	56	77	143	92	9	23	12	30
Stockholm, Sweden[a]	57	66	192	115	21	21	12	30
Helsinki, Finland[a]	52	45	247	323	21	69	14	61
Odense, Denmark[a]	69	51	173	152	17	37	18	36
Oxford, United Kingdom[b]	48	62	451	354	—	—	4	13
Leiden, The Netherlands[a]	57	67	129	82	12	22	9	17
Gent, Belgium[b]	58	77	315	320	9	33	—	—
Würzburg, Germany[a]	59	71	105	68	11	18	11	26
Hall/Innsbruck, Austria[b]	77	82	156	156	16	33	12	37
Bern, Switzerland[a]	62	66	119	99	20	49	14	42
Pecs, Hungary[b]	67	64	424	277	19	48	19	61
Ljubljana, Slovenia[b]	85	83	—	—	17	67	14	59
Padova, Italy[a]	64	76	93	55	7	10	5	14

[a]Suicide and parasuicide rates from 1991.
[b]Suicide and parasuicide rates from 1997.

was found, but again only a very small proportion of the variance was explained by gender. Moreover, when gender was entered into two-way analyses together with region, the gender difference disappeared. Some age differences were found in women, but here, too, the effect sizes were very low. No age differences were found in men. Small but statistically significant differences were probably due to the large sample size resulting in very high statistical power.

There are several differences between the regions participating in the WHO/EURO study, both in the prevalence of suicidal behavior and in the characteristics of parasuicide patients (Bille-Brahe et al., 1996a, 1996b, 1997; Schmidtke et al., 1996). The pattern of intentions involved in parasuicide was, however, quite consistent across regions, genders, and age groups. In a previous report from the study, a similar result was found for the level of suicidal intent (Hjelmeland et al., 2000). Thus the findings from different regions and countries using these types of instruments are probably generalizable to other settings.

The hypothesis of a positive correlation between the national and regional suicide rates and the frequency of choice of "wanted to die" was supported only for women (and only when national suicide rates were used). The hypothesis of a negative correlation between parasuicide rates and "wanted to die" was not supported, although the result almost reached the level of statistical significance, especially for men.

The main finding from this study is that parasuicide patients in different countries tend to indicate similar intentions for their acts of parasuicide, and that the intentions do not vary greatly with gender or age.

Methodological Issues

Some methodological limitations of this study should be taken into consideration when interpreting the results. Patients' post

hoc explanations about what they thought they wanted to achieve from the act at the time they carried it out have been investigated. Also, the possible intentions included in the questionnaire have been selected by researchers. This is likely to influence the patients' responses compared to what they might report spontaneously. However, the items in the questionnaire have been chosen from items commonly given spontaneously by parasuicide patients.

Previous research has shown that parasuicide patients tend to change their explanations over time (e.g., Rygnestad & Hauge, 1991). Therefore the delay between the acts of parasuicide and the research interviews may have influenced the results, although, if so, the nature of this effect cannot be determined. Patients also tend to give reasons that are socially acceptable and/or evoke sympathy or concern. The latter problem, however, would be expected to have been larger if the patients had been asked the questions by the interviewer. In this study, the patients marked the questionnaire themselves (self-report), which we hope has reduced this problem. Moreover, a test of reliability by means of a correlation analysis between the level of suicidal intent (assessed by the SIS) and the various intention subscales showed high consistency in the patients' reports.

Implications

The previous report from the WHO/EURO study regarding level of suicide intent (Hjelmeland et al., 2000) was the first step in examining the meaning of parasuicide ascribed by patients from different regions and countries. The present report of a range of intentions has been the second step. Quantitative methodology has been used in both these reports. One possible next step will be to use qualitative methodology to examine explanations at the individual level. Methods based on the phenomenological perspective, in which the central issue is to consider the meaning of phenomena in relation to each individual's personal circumstances, could be fruitful.

Use of an intentions questionnaire like that used in this study is likely to be helpful in assessment in clinical practice. The questionnaire could, for example, be completed by both the patient and the therapist, separately, and thus serve as a valuable basis to develop an understanding of the meaning of intention(s) underlying the act. The instrument may also be useful in treatment. For example, understanding why the parasuicide occurred is important when deciding what should be focused on in therapy, including in the possible prevention of future episodes. This notion was supported by the findings of Holden et al. (1998) that patient-attributed reasons for nonfatal suicidal behavior predicted a number of suicide criteria, namely, a wish to die as stated by the patients themselves, and suicidal desire, suicide preparation, and overall suicide risk as estimated by their clinicians. Furthermore, Holden et al. found that some of the patient-attributed reasons (internal perturbations) were just as good predictors for suicide risk as hopelessness has previously been found to be (e.g., Beck, Steer, Kovacs, & Garrison, 1985). Knowledge and understanding of the intentions involved in parasuicide are thus relevant factors to consider when deciding on appropriate treatment of suicidal individuals and prevention of future suicidal behavior.

CONCLUSION

Although there are considerable differences between the participating regions in the WHO/EURO study in the prevalence of both suicide and parasuicide, and also in some of the characteristics of parasuicide patients, the pattern of intentions involved in parasuicide seems to be reasonably consistent across regions. The findings from this study are likely to be generalizable to other settings and have implications for clinical practice.

REFERENCES

BANCROFT, J., HAWTON, K., SIMKIN, S., KINGSTON, B., CUMMING, C., & WHITWELL, D. (1979). The reasons people give for taking overdoses: A further inquiry. *British Journal of Medical Psychology*, *52*, 353–365.

BANCROFT, J.H.J., SKRIMSHIRE, A. M., & SIMKIN, S. (1976). The reasons people give for taking overdoses. *British Journal of Psychiatry*, *128*, 538–548.

BECK, A. T., SCHUYLER, D., & HERMAN, I. (1974). Development of Suicidal Intent Scales. In A. T. Beck, H.L.P. Resnik, & D. J. Lettieri (Eds.), *The prediction of suicide* (pp. 45–56). Philadelphia. Charles Press.

BECK, A. T., STEER, R. A., KOVACS, M., & GARRISON, B. (1985). Hopelessness and eventual suicide: A 10-year prospective study of patients hospitalized with suicidal ideation. *American Journal of Psychiatry*, *142*, 559–563.

BILLE-BRAHE, U. (Ed.). (1999). *WHO/EURO Multicentre Study on Parasuicide. Facts and figures* (2nd. ed.). Copenhagen: World Health Organization, Regional Office for Europe.

BILLE-BRAHE, U., ANDERSEN, K., WASSERMAN, D., SCHMIDTKE, A., BJERKE, T., CREPET, D., DE LEO, D., HARING, C., HAWTON, K., KERKHOF, A., LÖNNQVIST, J., MICHEL, K., PHILLIPPE, I., QUEREJETA, I., SALANDER-RENBERG, E., & TEMESVARY, B. (1996a). The WHO-EURO Multicentre Study on Parasuicide and the comparability of the areas under study. *Crisis*, *17*, 32–42.

BILLE-BRAHE, U., KERKHOF, A., DE LEO, D., SCHMIDTKE, A., CREPET, P., LÖNNQVIST, J., MICHEL, K., SALANDER-RENBERG, E., STILES, T. C., WASSERMAN, D., & EGEBO, H. (1996b). A repetition-prediction study on European parasuicide populations. *Crisis*, *17*, 22–31.

BILLE-BRAHE, U., SCHMIDTKE, A., KERKHOF, A.J.F.M., DE LEO, D., LÖNNQVIST, J., PLATT, S., & SAMPAIO FARIA, J. (1995). Background and introduction to the WHO/EURO Multicentre Study on Parasuicide. *Crisis*, *16*, 72–78, 84.

BILLE-BRAHE, U., KERKHOF, A., DE LEO, D., SCHMIDTKE, A., CREPET, P., LÖNNQVIST, J., MICHEL, K., SALANDER-RENBERG, E., STILES, T. C., WASSERMAN, D., AAGAARD, B., EGEBO, H., & JENSEN, B. (1997). A repetition-prediction study of European parasuicide populations: A summary of the first report from Part II of the WHO/EURO Multicentre Study on Parasuicide in co-operation with the EC Concerted Action on Attempted Suicide. *Acta Psychiatrica Scandinavica*, *95*, 81–86.

BIRTCHNELL, J., & ALARCON, J. (1971). The motivation and emotional state of 91 cases of attempted suicide. *British Journal of Medical Psychology*, *44*, 45–52.

BOERGERS, J., SPIRITO, A., & DONALDSON, D. (1998). Reasons for adolescent suicide attempts: Associations with psychological functioning. *Journal of the American Academy of Child and Adolescent Psychiatry*, *37*, 1287–1293.

COHEN, J. (1988). *Statistical power analysis for the behavioral sciences.* Hillsdale, NJ. Erlbaum.

HAWTON, K., COLE, D., O'GRADY, J., & OSBORN, M. (1982). Motivational aspects of deliberate self-poisoning in adolescents. *British Journal of Psychiatry*, *141*, 286–291.

HJELMELAND, H. (1995). Verbally expressed intentions of parasuicide: I. Characteristics of patients with various intentions. *Crisis*, *16*, 176–181.

HJELMELAND, H., & KNIZEK, B. L. (1999). Conceptual confusion about intentions and motives of nonfatal suicidal behavior: A discussion of terms employed in the literature of suicidology. *Archives of Suicide Research*, *5*, 275–281.

HJELMELAND, H., NORDVIK, H., BILLE-BRAHE, U., DE LEO, D., KERKHOF, A.J.F.M., LÖNNQVIST, J., MICHEL, K., SALANDER RENBERG, E., SCHMIDTKE, A., & WASSERMAN, D. (2000). A cross-cultural study of suicide intent in parasuicide patients. *Suicide and Life-Threatening Behavior*, *30*, 295–303.

HOLDEN, R. R., KERR, P. S., MENDONCA, J. D., & VELAMOOR, V. R. (1998). Are some motives more linked to suicide proneness than others? *Journal of Clinical Psychology*, *54*, 569–576.

JAMES, D., & HAWTON, K. (1985). Overdoses: Explanations and attitudes in self-poisoners and significant others. *British Journal of Psychiatry*, *146*, 481–485.

KERKHOF, A.J.F.M., BERNASCO, W., BILLE-BRAHE, U., PLATT, S., & SCHMIDTKE, A. (1989). *European Parasuicide Study Interview Schedule (EPSIS) for the WHO (Euro) Multicentre Study on Parasuicide*. University of Leiden, The Netherlands: Department of Clinical and Health Psychology.

LUKIANOWICZ, N. (1972). Suicidal behaviour: An attempt to modify the environment. *British Journal of Psychiatry*, *121*, 387–390.

MICHEL, K., VALACH, L., & WAEBER, V. (1994). Understanding deliberate self-harm: The patients' views. *Crisis*, *15*, 172–178, 186.

O'CARROLL, P. W., BERMAN, A. L., MARIS, R. W., MOSCICKI, E. K., TANNEY, B. L., & SILVERMAN, M. M. (1996). Beyond the tower of Babel: A nomenclature of suicidology. *Suicide and Life-Threatening Behavior*, *26*, 237–252.

PLATT, S., BILLE-BRAHE, U., KERKHOF, A., SCHMIDTKE, A., BJERKE, T., CREPET, P., DE

LEO, D., HARING, C., LÖNNQVIST, J., MICHEL, K., PHILIPPE, A., POMMEREAU, X., QUEREJETA, I., SALANDER-RENBERG, E., TEMESVÁRY, B., WASSERMAN, D., & SAMPAIO FARIA, J. (1992). Parasuicide in Europe: the WHO/EURO Multicentre Study on Parasuicide. I. Introduction and preliminary analysis for 1989. *Acta Psychiatrica Scandinavica*, *85*, 97–104.

RYGNESTAD, T., & HAUGE, L. (1991). Epidemiological, social and psychiatric aspects in self-poisoned patients. *Social Psychiatry and Psychiatric Epidemiology*, *26*, 53–62.

SCHMIDTKE, A., BILLE-BRAHE, U., DE LEO, D., KERKHOF, A., BJERKE, T., CREPET, P., HARING, C., HAWTON, K., LÖNNQVIST, J., MICHEL, K., POMMEREAU, X., QUEREJETA, I., PHILLIPE, I., SALANDER RENBERG, E., TEMESVÁRY, B., WASSERMAN, D., FRICKE, S., WEINACKER, B., & SAMPAIO-FARIA, J. G. (1996). Attempted suicide in Europe: Rates, trends and sociodemographic characteristics of suicide attempters during the period 1989–1992. Results of the WHO/EURO Multicentre Study on Parasuicide. *Acta Psychiatrica Scandinavica*, *93*, 327–338.

SCHMIDTKE, A., WEINACKER, B., APTER, A., BATT, A., BERMAN, A., BILLE-BRAHE, U., BOTSIS, A., DE LEO, D., DONEUX, R., GOLDNEY, R., GRAD, O., HARING, C., HAWTON, K., HJELMELAND, H., KELLEHER, M., KERKHOF, A., LEENAARS, A., LÖNNQVIST, J., MICHEL, K., OSTAMO, A., SALANDER RENBERG, E., SAYIL, I., TAKAHASHI, C., VAN HEERINGEN C., VÄRNIK, A., & WASSERMAN, D. (1999). Suicide rates in the world: Update. *Archives of Suicide Research*, *5*, 81–89.

SHNEIDMAN, E. (1985). *Definition of suicide*. Northvale, NJ: Aronson.

VARADARAJ, R., MENDONCA, J. D., & RAUCHENBERG, P. M. (1986). Motives and intent: A comparison of views of overdose patients and their key relatives/friends. *Canadian Journal of Psychiatry*, *31*, 621–624.

VELAMOOR, V. R., & CERNOVSKY, Z. Z. (1992). Suicide with the motive "to die" or "not to die" and its socioanamnestic correlates. *Social Behavior and Personality*, *20*, 193–198.

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